



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
901 NORTH 5TH STREET
KANSAS CITY, KANSAS 66101

01 AUG 2006

Mr. Richard Van Klaveren
State Conservationist
USDA-Natural Resources Conservation Service
210 Walnut Street
693 Federal Building
Des Moines, Iowa 50309

Dear Mr. Van Klaveren:

RE: Review of Draft Environmental Impact Statement for West Tarkio Creek
Watershed Plan

In accordance with our responsibilities under Section 309 of the Clean Air Act and the National Environmental Policy Act (NEPA), the Environmental Protection Agency (EPA) has reviewed the above referenced DEIS. This DEIS was assigned a Council on Environmental Quality (CEQ) file number 20060238. Based upon our review, EPA has rated the DEIS as "LO" (Lack of Objections). EPA's rating definitions are attached to provide additional information on the meaning of this rating.

Our comments aggregate around three issues (1) clarity of project need, (2) alternatives description and rationale for alternative rejection and, (3) cumulative impacts. Specific comments and recommendations are presented below.

General Comments

Because many readers of the final document will limit their review to the Summary portion, it should be clarified or expanded to address all major losses and net effects resulting from the project. For example, under "Environmental Impacts, Riparian areas," only the shoreline gains are presented without any reference to the current riparian areas that would be lost due to the impoundment and its pool. As for the positive and adverse effects upon fish and wildlife, the Summary captures only the gains expected for migratory birds.

Under "Environmental Impacts, Waters of the U.S", but also on page 54 under Environmental Consequences, use of the phrase "any modifications" leaves some doubt for the reader as to whether impacts to such waters will actually occur. Since it is clear that the construction of impoundments (i.e., major dam and sediment retention structures) will result in the need for a Clean Water Act Section 404 dredge and fill permit, we recommend that the word "any" be deleted.

Purpose and Need

Water Supply

The DEIS identifies the sponsor-developed water supply target as 4 million gallons per day (MGD) as a project purpose. EPA recommends that the Final EIS provide additional documentation on the basis for this value, particularly whether this value is based on population needs or projected industrial needs. For example, although the possibility of ethanol production in the area is mentioned in a number of places throughout the document, it is not clear whether the derivation of the water supply target is strongly influenced by this potential future need. The document states that population levels within the project area, have been, and continue to decline, but also identifies increasing municipal water needs as a justification for project construction. Within the document Summary, the DEIS includes "a projected expansion of the service area and growth in bio-fuel production and industry will result in a peak day demand of 4.0 million gallons per day." This statement seems incongruous given past and projected population trends. Unlike the broader geographic benefit applied to the recreational purpose (i.e., a regional reach of 75 miles), municipal water supply needs should be more limited to the immediate project area. The Final EIS should identify the basis for the 4.0 MGD water supply goal provided by the project sponsors, the specific source or sources of expanded local service and demand growth, the proportion of the projected increased demand attributable each to residential and industrial sources, particularly "bio-fuel" production, and reconcile these projections with historic, current and future population declines.

The DEIS refers often to "industry standards" to support its contention that current municipal water supplies for Shenandoah, Iowa taken from the East Nishnabotna River alluvium are inadequate. The Final EIS should explain the source of these "standards" and clarify their nature (i.e., regulatory or non-regulatory). Non-governmental readers could be confused by such terminology and might be unable to distinguish industry practices or standards from regulatory requirements. Similarly, the text within the "Purpose and Need for Action" section relies heavily on the terms "well field yield", "peak day demand", "peak daily supply" to describe a situation where water supply demand significantly exceeds supply. Further, the data provided for this comparison is five years old (2001). The Final EIS should be clearer in its comparison of water supply and demand and provide some information as to whether expressed supply and demand trends are expected to continue into the future.

In describing the sufficiency of water supply for Clarinda, Iowa from the West Nodaway River, the DEIS describes Iowa DNR's practice of assigning Protected Flows to certain Class B streams and identifies a specific value (15 cfs) as the Protected Flow assigned to the West Nodaway River. EPA's review of Iowa DNR's "Protected Flows for Selected Stream Segments, May 19, 2004", reveals that no Protected Flow is currently identified by Iowa DNR for this portion of the stream. In addition, in our review of the Iowa DNR document, it appears that Protected Flows never exceed 2 cfs. This will obviously affect this evaluation and the discrepancy should be addressed in the Final EIS. Further, Protected Flows have historically been used by Iowa DNR in place of the usual critical stream design flow (i.e., 7Q10) and,

therefore, represent low flows rather than average or expected flows. Comparisons made between the Protected Flow and minimum flows from 1918 through 2000 are deceiving as they reflect critical low flow rather than average or expected flow conditions. In reviewing the data in Table A on page 13, it appears that average flows far exceed the city's peak daily demand. In substantiating the need for additional water supply for the City of Clarinda, the Final EIS should avoid relying on and comparing Protected Flows and minimum flow values for the Nodaway River.

Water-based Recreation

Local population declines identified in the DEIS does not make a strong case for the need for additional recreational facilities in the area. The DEIS indicates that there "are 88 water-based recreational facilities within a 75 mile radius of the project area providing 1,342,372 annual user days of outdoor recreation, serving a population of 1.2 million people." It is unclear whether this existing condition represents adequate or inadequate recreational opportunities.

Agricultural Pollution Control

One of the stated project purposes is the protection of the water quality of the reservoir itself. As the reservoir does not exist without the project, specific project features intended to protect the reservoir are secondary to the basic purpose of accruing a finite volume of water. EPA would recommend identifying the basic project purpose as water supply, with secondary purpose of recreation. This, we believe could help streamline the Clean Water Act Section 404 process, where a basic tenement of that law is to strive for the least environmentally damaging practicable alternative (LEDPA). In addition, construction of a reservoir will remove the existing lotic aquatic community in the immediate area of the project, requiring a change to the State-assigned designated aquatic life use. Changes to the stream's hydrology resulting from dam placement could also result in a change to the aquatic community downstream of the project, possibly requiring a change in the designated use for that portion of the stream. With these known and presently unknown changes to the stream's natural aquatic community, protection of the stream as a potential environmental benefit of the project should not be included as an alternative project purpose.

Affected Environment

The DEIS, in multiple instances throughout the document, describes West Tarkio Creek as being an intermittent stream. On page 20, however, the DEIS also describes the stream as having "water typically present throughout the year." Iowa DNR water quality staff has indicated that West Tarkio Creek is perennial all the way from just east of Red Oak in Montgomery County to where it leaves the state in Page County. Field determinations of flow conditions made during the current six year drought constitute temporary, extreme conditions and not average, or expected, long-term hydrology. Determinations of stream water quality status or hydrology, as well as public water supply capacity, in support of this EIS should be based on the long-term hydrologic record rather than data gathered since 2000 during the current six-year drought or on statistics describing extreme conditions.

As mentioned in the previous section, estimates of water supply deficit based on critical low flow hydrology or Protected Flows represent a worst-case scenario and do not represent average conditions. The Final EIS should re-evaluate supply versus demand to more accurately reflect expected future conditions with regard to public water supply need. Such an evaluation, in addition to a description of how the sponsor's 4.0 MGD water supply target was derived, could assist in supporting the need statement for this project.

The Final EIS should clearly identify the expected adverse impacts to streams, wetlands, forests, and farmland that will result from the water supply lines that will be associated with the drinking water impoundment.

Alternatives

Page 26, "The public asked that sponsors study blending surface and groundwater sources for water supply." While several areas of the DEIS provide information that may indicate that groundwater quality and/or quantity issues prevent this alternative from being considered, there is no concise answer to this specific study request from the public.

Page 37, Table G, Waters of the US – Table G references the loss of 10.9 miles of stream under Alternative 4 and 10.1 miles of stream under Alternative 6. As Alternative 6 is to be located at Site 3 downstream of the Alternative 4 location and will flood more acres than Alternative 4, it is not clear why the number of stream miles lost under Alternative 6 is less than that lost under Alternative 4.

Environmental Consequences/ Preferred Alternative

The document does not provide an analysis of the likelihood or significance of head-cutting in West Tarkio Creek downstream of the proposed dam. With a significant reduction in the sediment load carried by the stream, aggressive stream water could degrade both the remaining stream bed and banks as it attempts to restore its equilibrium. The Final EIS should include an analysis of the potential for headcutting and identify possible structural changes to the project downstream of the dam inside the creek channel.

As a result of flow disruption necessary to initially fill and later maintain reservoir water levels, West Tarkio Creek downstream of the dam will likely suffer from an increase in the frequency of low or no flow conditions. This will result in either a short-term and/or long-term change in the existing aquatic life community and could, under continuing drought conditions, result in the elimination of the State-designated aquatic life use of Class B, Limited Resource. This potential change should be evaluated to assess compliance with Iowa's water quality standards regulations, including the state's antidegradation policy governing existing use protection. The Final EIS should include an evaluation of creek flow maintenance alternatives which would insure maintenance of a minimum, continuous flow necessary to protect the existing aquatic life community in West Tarkio Creek downstream from the dam.

West Tarkio Creek is on the state's Clean Water Act, Section 303(d) list with unknown causes. The DEIS does not describe how the preferred alternative will affect the regulatory listing status of this stream. The Final EIS should fully address this issue.

The document states, in many places throughout the text, that fish will be able to move upstream from the lake into tributary streams. Depending upon stream hydrology, sediment load and sediment basin design, these structures might prohibit movement of larger individuals into the headwaters of West Tarkio Creek and some of the larger tributaries. The Final EIS should identify measures as part of the project design to minimize this impact to fish movement.

The DEIS states that "few wetlands are present in the watershed." A detailed assessment and inventory of wetland areas is not provided in the DEIS. Regardless, the construction of this project could reasonably be expected to affect, and possibly eliminate, wetlands within the full watershed although possibly not within the footprint of the reservoir itself. Changes in watershed hydrology (e.g., the quantity and timing of flow in the creek and tributaries, slight changes in water table elevation, changes in flood frequency, etc.), including both upstream and downstream of the dam and reservoir, could result in wetland loss. EPA recommends that the FEIS include consideration for these potential direct and indirect impacts to all wetland types throughout the entire watershed.

Upon identifying more clearly the wetland losses in the Final EIS, it also should address how in-kind mitigation of those wetlands will occur. Wetland 'gains' described in the DEIS could be "out of kind," reducing their effectiveness for mitigation. The DEIS alludes to the passive creation of wetlands in the upper margins of the permanent pool and the upland sediment basins. Wetlands could be expected also to develop in the in-channel sediment basin. However, because the sediment basins could be expected to be periodically dredged to maintain their sediment holding capacity, we recommend that such basin related wetland communities not be considered as part of any wetland mitigation proposal. At the same time, we would encourage the development of wetland vegetation in the sediment basins to serve as sites for trapping and breaking down pollutants including pesticides and nutrients.

The Final EIS should also include consideration of in-kind stream mitigation given the loss of stream habitats. Flat water habitat, which will replace such stream habitats, should not constitute mitigation for stream losses. Further, the project sponsors should consider addressing the role that restored riparian areas will play as part of required stream mitigation; however, in-channel mitigation measures, and not just riparian mitigation measures, should be considered both for West Tarkio Creek and for other tributaries to the Creek. Planning and targeting mitigation for 10.1 miles of stream channel lost to the proposed project should not be delayed until a separate Clean Water Act Section 404 process is initiated during the application process. We believe that all mitigation options should be addressed early and, as fully as planning for such mitigation will allow, considered in the overall project costs. The Final EIS should be specific in the measures that will be taken to mitigate the loss of stream channel and should be reflected as project costs.

Cumulative Impacts

The Cumulative Impacts Matrix beginning on page 57 does not convey the possibility that populations of nuisance aquatic species, particularly purple loosestrife and zebra mussels, might become established in areas surrounding and within the reservoir. Specifically, with regard to zebra mussels, the availability of boating recreation presents an increased potential for transportation of this species to the reservoir from waters presently containing this species (e.g., Missouri River, Lake of the Ozarks).

The Cumulative Impacts Matrix, under rows for "Changes in hydrology", "Destruction of Streams", "Eutrophication" and "Considerable effects on water quality parameters", might inappropriately classify the impact of the proposed action on the "Future Condition" as beneficial. In general, the benefits attributed to construction of the project for the downstream portion of the creek could be short-lived or over-estimated in scope. In some instances these "benefits" might actually result in adverse changes to hydrology or water quality in the creek. In other instances, the "benefits" identified with the project for the stream might result in adverse impacts within the reservoir. Specifically, sedimentation within the West Tarkio Creek watershed will continue regardless of reservoir construction, but will be retained within the reservoir system. This could result in headcutting and bank material loss as a result of downstream creek flows trying to regain a water column solids equilibrium. The same concerns apply to nutrients and nutrient loading. Depending upon the depth of the lake, phosphorous levels within the lake will vary, but could change with sediment resuspension and cycling from the sediment. Although the document states that area groundwater mounding resulting from the reservoir will sustain streamflows, our experience with many reservoirs in Iowa suggests that flows downstream of the dam will decrease and be with associated water quality degradation. Finally, stream loss is presented as a low adverse effect within the matrix. Regardless of the creation of a new lentic system, loss of any lotic system with the resulting change in the existing aquatic community would not be considered to be a low adverse effect. EPA would recommend that this specific transition be validated in terms of significance of the impact.

EPA issued draft technical guidance for managing nonpoint source pollution from hydromodification on July 17, 2006. A copy of this guidance is enclosed. The guidance is intended to provide technical assistance to local governments and the public for managing hydromodification and reducing nonpoint source pollution of surface and ground water. This guidance addresses impacts associated with channelization and channel modification, dams and streambank and shoreline erosion. It discusses the broad concepts of assessing water quality problems on a watershed level and it presents up-to-date technical information about how to reduce nonpoint source pollution from hydromodification. In preparing the Final EIS, we recommend that you review this guidance and consider implementing measures which could reduce water quality impairment associated with project features, particularly downstream of the project.

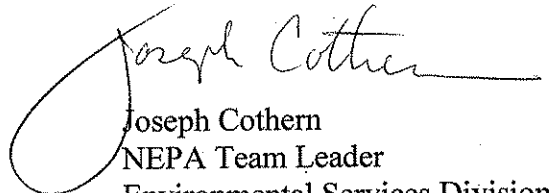
Other Recommendations

Fish are voracious predators of larval amphibians. We recommend that the project sponsors consider not stocking the sediment basins with fish, as this will improve the survival of identified amphibian "species of concern."

In addition, we recommend managing the sediment basins and the impoundment pool to include areas shallower than 3 feet (targeting 18 inches of water).

Thank you for the opportunity to review this document. If you have any questions about this comment or rating, please contact Larry Shepard at (913) 551-7441, or myself at (913)-551-7148.

Sincerely,



Joseph Cothorn
NEPA Team Leader
Environmental Services Division